Guide for Setting Up Cassandra Cluster

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# 硬件参数

|  |  |  |
| --- | --- | --- |
| **Item** | **Specification** | **Remarks** |
| RAM | 32GB |  |
| CPU | 8 Cores |  |
| OS Disk | 20 GB |  |
| Data Disk | 2048 GB | /var/lib/cassandra |
| Log Disk | 512 GB | /var/log/cassandra |

# 收集信息

Fill the form below

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Key** | **Value** | **Comments** |
| Cassandra Node 1 | IP Address |  | Seed node |
| Cassandra Node 2 | IP Address |  | Seed node |
| Cassandra Node 3 | IP Address |  |  |
| App Server 1 | IP Address |  |  |
| App Server 2 | IP Address |  |  |

# 开始之前

## 所需文件

确保你获得以下文件:

* jdk-8u102-linux-x64.tar.gz
* dsc-cassandra-2.1.11-bin.tar.gz
* apache-cassandra-3.9-bin.tar.gz
* DataStaxOpsCenter-5.2.2.2015102711-linux-x64-installer.run

## 所需工具

准备以下工具:

* WinSCP (<http://winscp.net/> )
* PuTTY (<http://www.putty.org/>)
* Notepad ++ (可选, <https://notepad-plus-plus.org/>) (WinSCP与Notepad++的集成在这里<https://winscp.net/eng/docs/integration_editor>)

# 安装前置

本说明以以下假设为前提: 服务器满足硬件参数条件; Linux HyperV虚拟机集成服务或者VmWare虚拟机的VmWare Tools已安装.

关于Linux集成服务的更多信息请参阅:

<http://blogs.technet.com/b/virtualization/archive/2015/05/01/linux-integration-services-4-0-announcement.aspx>

## 更新Hostname

hostnamectl set-hostname **CassandraNodeName**

例如:

hostnamectl set-hostname Cassandra\_Node\_1

# 安装JDK

参考: http://www.cnblogs.com/yy3b2007com/p/5879178.html

## 确保JDK尚未安装

cd /

java -version

输出应该如下

-bash: java: 未找到命令

## 上传RPM

使用WinSCP上传“jdk-8u102-linux-x64.tar.gz” 到路径/usr/lib/jvm

## 安装JDK

mv jdk1.8.0\_102/ java-8-oracle

设置环境变量:

$vim /etc/profile

在profile文件末尾追加

export JAVA\_HOME=/usr/lib/jvm/java-8-oracle  
export JRE\_HOME=/usr/lib/jvm/java-8-oracle  
export PATH=$JAVA\_HOME/bin:$JAVA\_HOME/jre/bin:$PATH  
export CLASSPATH=$CLASS\_PATH::$JAVA\_HOME/lib:$JAVA\_HOME/jre/lib

（esc,:wq!保存）

$sudo update-alternatives --install /usr/bin/Java java /usr/lib/jvm/java-8-oracle/bin/java 300

$sudo update-alternatives --install /usr/bin/javac javac /usr/lib/jvm/java-8-oracle/bin/javac 300

$sudo update-alternatives --config java

$sudo update-alternatives --config javac

## 删除RPM

rm -f -v jdk-8u102-linux-x64.tar.gz

## 验证安装

cd /

java -version

输出应该如下:

java version "1.8.0\_102”

Java(TM) SE Runtime Environment (build 1.8.0\_102-b14)

Java HotSpot(TM) 64-Bit Server VM (build 25.102-b14, mixed mode)

# 配置防火墙

## 更新防火墙配置

apt install firewalld

firewall-cmd --permanent --zone=internal --add-port=8888/tcp

firewall-cmd --permanent --zone=internal --add-port=7000/tcp

firewall-cmd --permanent --zone=internal --add-port=7001/tcp

firewall-cmd --permanent --zone=internal --add-port=7199/tcp

firewall-cmd --permanent --zone=internal --add-port=9042/tcp

firewall-cmd --permanent --zone=internal --add-port=9160/tcp

firewall-cmd --permanent --zone=internal --add-port=61620/tcp

firewall-cmd --permanent --zone=internal --add-port=61621/tcp

firewall-cmd --permanent --zone=internal --add-source=**cassandra\_node\_1\_ip\_addr**

firewall-cmd --permanent --zone=internal --add-source=**cassandra\_node\_2\_ip\_addr**

firewall-cmd --permanent --zone=internal --add-source=**cassandra\_node\_3\_ip\_addr**

firewall-cmd --permanent --zone=internal --add-source=**app\_server\_ip1**

firewall-cmd --permanent --zone=internal --add-source=**app\_server\_ip2**

firewall-cmd --reload

## 检查防火墙状态

firewall-cmd --zone=internal --list-all

输出应该如下

internal

interfaces:

sources: ***ip\_addresses***

services: dhcpv6-client ipp-client mdns samba-client ssh

ports: **8888/tcp 7000/tcp 7001/tcp 7199/tcp 9042/tcp 9160/tcp 61620/tcp 61621/tcp**

masquerade: no

forward-ports:

icmp-blocks:

rich rules:

# 安装 Cassandra

参考: <http://docs.datastax.com/en/cassandra/2.1/cassandra/install/installTarball_t.html>

使用默认安装：

https://www.digitalocean.com/community/tutorials/how-to-install-cassandra-and-run-a-single-node-cluster-on-ubuntu-14-04

## 上传 Tarball

使用 WinSCP上传“apache-cassandra-3.9-bin.tar.gz”到路径**~**

## Extract the downloaded Tarball

cd

tar zxvf apache-cassandra-3.9-bin.tar.gz

## 解压和重命名

mv apache-cassandra-3.9-bin.tar.gz /usr/share/cassandra

## 删除Tarball

rm -f -v apache-cassandra-3.9-bin.tar.gz

## 创建进程PID文件

mkdir /var/run/cassandra

mkdir /var/log/cassandra

mkdir /var/lib/cassandra

## 创建cassandra用户并且给予权限

adduser cassandra

chown -R cassandra /var/log/cassandra/

chown -R cassandra /var/run/cassandra/

chown -R cassandra /var/lib/cassandra/

chown -R cassandra /usr/share/cassandra/

# 配置Cassandra节点

## 编辑节点配置

按如下修改 “/usr/share/cassandra/conf/cassandra.yaml”

**cluster\_name**: 'BPSCluster'

seed\_provider:

- class\_name: org.apache.cassandra.locator.SimpleSeedProvider

parameters:

- **seeds**: "**seed\_ip\_addr1,seed\_ip\_addr2**"

**listen\_address:** **ip\_addr**

**rpc\_address:** **ip\_addr**

**endpoint\_snitch:** SimpleSnitch

**data\_file\_directories:**

- /var/lib/cassandra/data

**commitlog\_directory**: **/var/log/cassandra/commitlog**

**saved\_caches\_directory:** **/var/lib/cassandra/saved\_caches**

## 配置Cassandra开机启动脚本

上传cassandra 到/etc/init.d 文件下

## 将Cassandra添加到开机启动服务

使用 WinSCP上传“cassandra”到路径**/etc/init.d/**

cd /etc/init.d/

添加脚本的执行权限  
sudo chmod a+x /etc/init.d/cassandra  
设置开机自动启动  
sudo update-rc.d cassandra defaults

## 重启Ubuntu

reboot

重启后登录ubuntu

## 检查Cassandra服务状态

/usr/share/cassandra/bin/nodetool status

使用默认安装：

/usr/bin/nodetool status

输出应该如下:

Datacenter: datacenter1

=======================

Status=Up/Down

|/ State=Normal/Leaving/Joining/Moving

-- Address Load Tokens Owns (effective) Host ID Rack

UN 192.168.137.127 51.67 KB 256 100.0% 26acca41-8ffa-4962-96bd-d1d21a483b18 rack1

And after you’ve finished setting up all 3 nodes, you’ll see output:

Datacenter: datacenter1

=======================

Status=Up/Down

|/ State=Normal/Leaving/Joining/Moving

-- Address Load Tokens Owns (effective) Host ID Rack

UN 192.168.137.221 192.32 KB 256 67.0% 26acca41-8ffa-4962-96bd-d1d21a483b18 rack1

UN 192.168.137.222 168.46 KB 256 64.9% 487623dd-50d0-4c08-af97-0bb84fbe70cb rack1

UN 192.168.137.223 113.61 KB 256 68.1% b141c533-541f-40a8-b64e-c94fdfb2f1e7 rack1